

Identifying Metabolic Pathways Producing Alkamides in *Echinacea purpurea*

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Echinacea purpurea is a widely used herbal supplement that is frequently taken to relieve cold symptoms; alkamides are believed to be the bioactive agent. Alkamides are natural products found throughout the *Echinacea* genus that contain fatty acid chains incorporated into amides. Our goal is to identify and understand the specific metabolic processes by which *E. purpurea* produces alkamides. In our experiment *Echinacea* seedlings were grown to the point where the first true leaf started to grow and alkamide production is known to be active. Alkamides were then extracted and taken to the GC/MS for analysis. Extracted alkamides were analyzed by triple-quadrupole chromatography to investigate ¹³C labeling by glucose. We are currently in the process of examining the spectra in order to determine the structures of the alkamides as well as any metabolic relationships and if these are altered by a lack of light.

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